

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

5 (a) the nucleotide sequence as set forth in SEQ ID NO: 1 or SEQ ID NO: 3;

(b) a nucleotide sequence encoding the polypeptide as set forth in SEQ ID NO: 2 or SEQ ID NO: 4;

10 (c) a nucleotide sequence encoding a polypeptide that is at least about 80 percent identical to the polypeptide as set forth in SEQ ID NO: 2 or SEQ ID NO: 4 wherein the polypeptide activates one or more FGF receptors, regulates the growth and differentiation of cells within the liver, regulates other cell types following secretion from the liver, plays a role in liver chemotaxis, has an oncogenic activity, or serves as an antigen for generating antibodies;

15 (d) an allelic variant or splice variant of any of (a), (b) or (c);

(e) the nucleotide sequence of the DNA insert in ATCC Deposit No. _____;

20 (f) a nucleotide sequence of (b), (c) or (d) encoding a polypeptide fragment of at least about 25 amino acid residues wherein the polypeptide fragment activates one or more FGF receptors, regulates the growth and differentiation of cells within the liver, regulates other cell types following secretion from the liver, plays a role in liver chemotaxis, has an oncogenic activity, or serves as an antigen for generating antibodies;

25 (g) a nucleotide sequence of (a), (b) or (c) comprising a fragment of at least about 16 nucleotides;

(h) a nucleotide sequence encoding a polypeptide that has a substitution and/or deletion of 1 to 100 amino acid residues as set forth in either SEQ ID NO: 2 or SEQ ID NO: 4 wherein the polypeptide activates one or more FGF receptors, regulates the growth and differentiation of cells within the liver, regulates other

cell types following secretion from the liver, plays a role in liver chemotaxis, has an oncogenic activity, or serves as an antigen for generating antibodies; and

- (i) a nucleotide sequence which hybridizes under stringent conditions to the complement of any of (a) - (h);
- (j) a nucleotide sequence complementary to any of (a), (b), (c), or (i).

2. A recombinant host cell comprising a nucleic acid molecule comprising the nucleotide sequence of Claim 1.

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3. The recombinant host cell of Claim 2 which is a eukaryotic cell.

4. The recombinant host cell of Claim 2 which is a prokaryotic cell.

5. A process of producing FGF-like polypeptide comprising culturing the recombinant host cell of Claims 2, 3, or 4 in a culture medium under conditions such that said polypeptide is produced.

6. The process of Claim 5, wherein said polypeptide is isolated.

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7. The process of Claim 5, wherein the nucleic acid molecule comprises promoter DNA other than the promoter DNA for the native FGF-like polypeptide operatively linked to the DNA encoding the FGF-like polypeptide.

8. An expression vector comprising the nucleic acid molecule of Claim 1.

9. A host cell comprising the expression vector of Claim 8.

10. The host cell of Claim 9 which is a eukaryotic cell.

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11. The host cell of Claim 9 which is a prokaryotic cell.

12. A process for determining whether a compound inhibits FGF-like polypeptide activity or FGF-like polypeptide production comprising exposing a cell according to Claims 2, 3, 4, 8, 9, or 10 to the compound, and measuring FGF-like polypeptide activity or FGF-like polypeptide production in said cell.

13. A process for producing a protein comprising growing a culture of the host cell of Claims 9, 10, or 11 in suitable culture medium and isolating the protein from the culture.

14. A polypeptide produced by the process of Claim 13.

15. An isolated polypeptide comprising the amino acid sequence selected from the group consisting of:

(a) the amino acid sequence as set forth in SEQ ID NO: 2 or SEQ ID NO: 4;

(b) the mature amino acid sequence as set forth in SEQ ID NO: 5 or SEQ ID NO: 6 comprising a mature amino terminus at residue 29 in the mature human amino acid sequence and at residue 30 in the mature mouse amino acid sequence in both sequences, optionally further comprising an amino-terminal methionine;

(c) a fragment of the amino acid sequence set forth in SEQ ID NO: 2 or SEQ ID NO: 4 comprising at least about 25 amino acid residues wherein the fragment activates one or more FGF receptors, regulates the growth and differentiation of cells within the liver, regulates other cell types following secretion from the liver, plays a role in liver chemotaxis, has an oncogenic activity, or serves as an antigen for generating antibodies;

(d) the amino acid sequence encoded by the DNA insert of ATCC Deposit No. _____;

(e) an ortholog of SEQ ID NO: 2 or SEQ ID NO: 4; and

(f) an allelic variant or splice variant of (a), (b), (d), or (e).

16. An isolated polypeptide encoded by the nucleic acid molecule of Claim 1.

5 17. An antibody produced by immunizing an animal with a peptide comprising an amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4.

18. An antibody or fragment thereof that specifically binds the polypeptide of Claim 15.

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19. The antibody of Claim 18 that is a monoclonal antibody.

20. A hybridoma that produces a monoclonal antibody that binds to a peptide comprising an amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4.

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21. A method of detecting or quantitating the amount of FGF-like polypeptide using the anti-FGF-like antibody or fragment of Claims 17, 18, or 19.

22. A composition comprising the polypeptide of Claim 15 and a pharmaceutically acceptable formulation agent.

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23. The composition of Claim 22 wherein the pharmaceutically acceptable formulation agent is a carrier, adjuvant, solubilizer, stabilizer, or anti-oxidant.

24. The composition of Claim 12 wherein the polypeptide comprises the mature amino acid sequence as set forth in SEQ ID NO: 2.

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25. A polypeptide comprising a derivative of the polypeptide of Claim 15.

26. The polypeptide of Claim 25 which is covalently modified with a water-soluble polymer.

27. The polypeptide of Claim 26 wherein the water-soluble polymer is
5 selected from the group consisting of polyethylene glycol or dextran.

28. A fusion polypeptide comprising the polypeptide of Claim 15 fused to a heterologous amino acid sequence.

10 29. The fusion polypeptide of Claim 28 wherein the heterologous amino acid sequence is an IgG constant domain or fragment thereof.

30. A method for treating, preventing or ameliorating a medical condition comprising administering to a patient the polypeptide of Claim 15 or the
15 polypeptide encoded by the nucleic acid of Claim 1.

31. The method of Claim 30 wherein the medical condition being treated, prevented, or ameliorated is cirrhosis or other toxic insult of the liver; inflammatory bowel disease, mucositis, Crohn's disease, or other gastrointestinal
20 abnormality; diabetes; neurodegenerative diseases; stimulation of angiogenesis in wound repair; inhibition of angiogenesis in the eye or tumors; stimulation of epithelium or mesenchymal components of granulation tissue in wound repair; stimulation of corneal epithelium, lens, or retinal repair; regeneration of renal tubules following acute tubular necrosis; regulation of hemaopoietic cells
25 following chemotherapy; multiple sclerosis; regulation of hair follicle growth in alopecia; diseases or abnormalities of androgen target organs; infantile respiratory distress syndrome, bronchopulmonary dysplasia, acute respiratory distress syndrome, or other lung abnormalities; or cancer.

32. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or amount of expression of the polypeptide of Claim 15 or the polypeptide encoded by the nucleic acid molecule of Claim 1 in a sample; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.

33. A device, comprising:

(a) a membrane suitable for implantation; and

(b) cells encapsulated within said membrane, wherein said cells secrete a protein of Claim 15;

said membrane being permeable to said protein product and impermeable to materials detrimental to said cells.

34. A method of identifying a compound which binds to a polypeptide comprising:

(a) contacting the polypeptide of Claim 15 with a compound; and

(b) determining the extent of binding of the polypeptide to the compound.

35. The method of Claim 34 further comprising determining the activity of the polypeptide when bound to the compound.

36. A method of modulating levels of a polypeptide in an animal comprising administering to the animal the nucleic acid molecule of Claims 1 or 8.

37. A transgenic non-human mammal comprising the nucleic acid molecule of Claims 1 or 8.

38. A process for determining whether a compound inhibits FGF-like polypeptide activity or FGF-like polypeptide production comprising exposing a transgenic mammal according to Claim 37 to the compound, and measuring FGF-like polypeptide activity or FGF-like polypeptide production in said mammal.

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